

APPARATUS AND METHOD FOR CONNECTING A CELLULAR TELEPHONE TO A UNIVERSAL SERIAL BUS

ABSTRACT

A system and method for connecting a cellular telephone to a personal computing device.

- 5 A mobile phone interface (MPI) is molded between the ends of a Universal Serial Bus (USB) cable. One end of the USB cable is plugged into a standard USB port on a personal computing device and the other end is plugged into a cellular telephone. The MPI comprises a USB serial interface engine (USB SIE), a digital translation block (DTB) and a cellular phone interface. The cellular phone interface provides electrical connections to the signals within the supported
- 10 10 cellular telephone. The DTB performs synchronous and asynchronous data transfers and buffer functions in accordance with the implemented protocol. The USB serial interface engine performs serialization, de-serialization and USB set-up in accordance with USB standards. Software for controlling the MPI is installed on the computer system. The control software comprises a communication control stack, a hardware access driver and an external plug-in
- 15 15 module. The communication control stack comprises an AT parser, a call control module, and one or more internal plug-in protocol modules. The external plug-in module comprises an external protocol stack. The external protocol stack typically comprises a control path and a data path. The control path is used to process control and status data and the data path is used to process communications data. The control and data path comprises a high level interface, a low
- 20 20 level interface and storage queues. The high level interfaces communicate with the communication control stack and the low lever interfaces communicate with the hardware access driver. The hardware access driver is interrupt driven based on the MPI hardware to control the flow of data.